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EXAMINER	
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ART UNIT	PAPER NUMBER
2193	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,802	FARCHI ET AL.	
	Examiner	Art Unit	
	Jason Mitchell	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 December 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This action is in response to remarks filed on 12/13/04.

Claims 1-21 are pending in this case.

Response to Arguments

1. Applicant's arguments filed 12/13/04 regarding the 102 rejection of claims 1, 8 and 15 have been fully considered but they are not persuasive.

In the paragraph bridging pages 5 and 6 of the remarks filed on 12/13/04 Applicant states:

> Applicants define "code coverage task" as "a basic block of code for which an execution of a test returns a true value if the testing requirement of the task is fulfilled and a false value if the requirement of the task is not fulfilled" Applicants go on to state, "a basic block is a set of consecutive statements which a single entry point (i.e. the first statement) and a single exit point (i.e. the last statement)." Applicants go on to state further that coverage tasks "could be at module level, block level or statement level".

Examiner notes that the text cited is only exemplary, as indicated by lines 5-7 on pg. 13 of the specification ('Those of ordinary skill in the art will recognize that there are other alternative ways to divide a program source code into coverage tasks.').

Further, it is respectfully submitted that Claim 1 does not contain language to limit a "code coverage tasks" to "a basic block of code".

In the first paragraph on page 7 of the response, applicant states:

> Looking at independent claim 1, "dividing the program source code statements of said computer program into a plurality of code coverage tasks" necessarily implies division of source code into modules, blocks, or statements.

Respectfully, it is Examiner's position that Chen discloses this limitation at col. 2 lines 47-50 with 'partitioned into basic code entities'

Applicant goes on to state:

> Going further, the claimed generation of a persistent unique name for each of the code coverage tasks then refers to the naming of modules, blocks, or statements, different from Chen's entities once again.

Examiner respectfully submits, it is apparent that Chen's "basic code entities" and Applicant's "code coverage tasks" both perform the function of dividing the source code into discreet logical areas. Additionally Chen's disclosure on lines 20-21 of col. 11 indicates that the attributes assigned (col. 9, lines 1-3 'kind ... name') are used for the purpose of identifying the logical areas to allow later comparison for changes and detection of execution during a test run, as is claimed.

In the second paragraph on pg. 7 Applicant states:

> Based on the forgoing, when the present invention inserts coverage points into the computer program source code for each of the code coverage tasks, as claimed for example in claim 1, the portion of Chen on which the Examiner relies at col. 7, lines 7-9 referring to the adding of instrumentation, has nothing to do even with the Chen "entities" which the Examiner is attempting to the claimed code coverage tasks.

Examiner respectfully disagrees. As written the claim recites the language "inserting coverage points into the computer program source code for each of the code coverage tasks to produce instrumented code". At col. 7, lines 7-9 Chen is clearly 'inserting coverage points' and producing 'an instrumented program'. Further, The data from this instrumented program is used to produce a list of all 'entities' executed during the test

(col. 9, lines 32-33) and thus coverage points, clearly must have been inserted 'for each of the' entities.

In the third paragraph of pg. 7 Applicant states:

> Looking further at claim 1, the creation of a code coverage database using the code coverage tasks in no way corresponds to Chen's generation of an entity trace list for each test unit, to which the Examiner refers at col. 9, lines 32-35 of Chen.

This argument amounts to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

Further, Examiner respectfully points out that both Chen's 'entity trace list' and Applicants 'code coverage database' store data indicating which code areas have and have not been executed and that each is used to determine which test sets to need to be rerun.

For the reasons stated above, Examiner is maintaining the rejections of independent claims 1, 8, and 15 as well as the rejections of dependent claims 6-7, 13-14 and 20-21.

In the first full paragraph on pg. 8, Applicant states:

> Neither Winder nor Reinhardt supplies the deficiencies of Chen. The Examiner relies on Winder because of some general, highly non-specific statements there in. Concerning claims 2, 9 and 16, ... the unique naming in these claims finds no response in Chen, as the Examiner acknowledges, but also finds no response in Winder because there is simply no motivation to make any kind of suggestions ... in Winder to modify the teachings of Chen.

Respectfully, it is Examiner's position that the motivation to combine provided in the previous action is sufficient to teach this limitation. Winder teaches a method of

organizing data so that it is easier to retrieve (pg. 84 col. 3) and Chen has data that needs to be accessed (col. 9, lines 32-35), Further, Examiner does to contend that either Chen or Winder discloses or teaches Applicant's claimed naming convention as a whole, but (as indicated in the rejection) that the claimed limitations would have been an obvious result of a combination of the two references. Consequently the rejections of claims 2-3, 9-10, and 16-17 are maintained.

Drawings

The replacement drawings submitted on 12/13/04 are accepted and the previous objection is withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6-8, 13-15, and 20-21 are rejected under 35 U.S.C. 102(b) as being anticipated by USPN 5,573,387 to Chen et al. (Chen).

Regarding Claim 1: Chen discloses a method using a computer system for collecting persistent code coverage data for a computer program, the computer program comprising program source code statements (col. 5, lines 33-52), the method

comprising the steps of: identifying the computer program for which the persistent code coverage data should be collected (col. 2, lines 47-50 'a software system'); dividing the program source code statements of said computer program into a plurality of code coverage tasks (col. 2 lines 47-50 'partitioned into basic code entities'), generating a persistent unique name for each of the code coverage tasks (col. 9, lines 1-3 'all entities have the attributes ... kind, ... name' and col. 11, lines 20-21 'two entities match if they have the same name and entity kind') of said plurality of code coverage tasks; inserting coverage points into the computer program source code for each of the code coverage tasks to produce an instrumented program (col. 7, lines 7-9 'adding instrumentation'), compiling and linking the instrumented program into a program executable (col. 7, lines 9-11 'compiled by a C compiler'), identifying a set of test cases from a plurality of test cases to be run for the code coverage data collection purposes (col. 11, lines 66-67 'determine which test units ... need to be re-run'); creating a code coverage database using the code coverage tasks and the identified set of test cases (col. 9, lines 32-35 'generate an entity trace list for each test unit'); running the program executable with a test case from the identified set of test cases (col. 7, lines 30-33 'for each of the N test units') and writing the information about the test case and the coverage points that are executed into an output file (col. 7, lines 40-44 'generates a function trace list'), until all the test cases have been run (col. 7, line 32 'for each of the N test units'); and processing the information contained in the output file into code coverage data and populating the code coverage database with said code coverage data (col. 9, lines 32-35 'the function trace lists ... are then used to generate an entity trace list').

Regarding Claim 6: The rejection of claim 1 is incorporated; further, Chen discloses modifying the computer program to produce a modified version of the computer program source code (col. 10. line 50-53 'after modifications have been made'); identifying a plurality of new, modified, and deleted code coverage tasks (col. 10, lines 63-66 'entity difference list') in said modified version of the computer program source code; generating a persistent unique name (col. 9, lines 1-3 'all entities have the attributes ... kind, ... name' and col. 11, lines 20-21 'two entities match if they have the same name and entity kind') for each of the new and modified code coverage tasks of said plurality of new, modified and deleted code coverage tasks; inserting coverage points (col. 7, lines 7-9 'adding instrumentation') into the modified version of the computer program source code for each of the new and modified code coverage tasks to produce an instrumented modified version of the computer program source code; compiling and linking the instrumented modified version of the computer program source code (col. 7, lines 9-11 'compiled by a C compiler') into a modified program executable, identifying a new set of test cases (col. 11, lines 66-67 'the entity difference list is used ... to determine which tests units ... need to be re-run') from a plurality of test cases to be run for the code coverage data collection purposes on the new and modified code coverage tasks; altering the code coverage database to accommodate new, modified and deleted code coverage tasks (col. 12, lines 41-47 'new entity trace lists must be generated for each test unit') and the new set of test cases, and clearing any code coverage data for the modified code coverage tasks (col. 12, lines 41-43 'new entity traces list must be generated') from said code coverage database; running the

modified program executable with a test case from the identified new set of test cases (col. 11, lines 66-67 're-run') and collecting code coverage data for the new and modified code coverage tasks (col. 7, lines 40-44 'generates a function trace list'), until all the test cases have been run (col. 7, line 32 'for each of the N test units'); and updating the code coverage database with the collected code coverage data (col. 9, lines 32-35 'the function trace lists ... are then used to generate') for the new and modified code coverage tasks; whereby the previously collected code coverage data for the non-affected code coverage tasks is preserved (col. 12, liens 41-47 'new entity trace lists must be generated ... covered by each of the selected test units') from a previous version of the computer program to the modified version of said computer program eliminating the need for running the entire test bucket (col. 11, lines 66-67 'which test units ... need to be re-run').

Regarding Claim 7: The rejection of claim 6 is incorporated; further Chen discloses changing the version indicator (col. 8, lines 59-63 'checksum is used ... to determine whether an entity has been changed' and col. 11, lines 26-27 'the checksum ... is retrieved from the second C program database'). While not explicitly stated, the checksum does identify the version of the entity in that it distinguishes between two different versions of said entity.

Regarding Claim 8: Chen discloses an apparatus for collecting persistent code coverage data for a program, the persistent code coverage data being stored in a code coverage database associated with the program (col. 6, lines 50-52 'the external storage device ... may be used for the storage of data), the program comprising

program source code statements (col. 5, lines 33-52), the apparatus comprising: a computer system having a data storage device (col. 6, lines 50-52 'the external storage device ... may be used for the storage of data') connected thereto, wherein the data storage device stores the code coverage database, and one or more computer programs (col. 6, lines 50-52 'the external storage device ... may be used for the storage of ... computer program code') executed by the computer system for: identifying the computer program for which the persistent code coverage data should be collected (col. 2, lines 47-50 'a software system'); dividing the program source code statements of said computer program into a plurality of code coverage tasks (col. 2 lines 47-50 'partitioned into basic code entities'), generating a persistent unique name for each of the code coverage tasks (col. 9, lines 1-3 'all entities have the attributes ... kind, ... name' and col. 11, lines 20-21 'two entities match if they have the same name and entity kind') of said plurality of code coverage tasks; inserting coverage points into the computer program source code for each of the code coverage tasks to produce an instrumented program (col. 7, lines 7-9 'adding instrumentation'), compiling and linking the instrumented program into a program executable (col. 7, lines 9-11 'compiled by a C compiler'), identifying a set of test cases from a plurality of test cases to be run for the code coverage data collection purposes (col. 11, lines 66-67 'determine which test units ... need to be re-run'); creating a code coverage database using the code coverage tasks and the identified set of test cases (col. 9, lines 32-35 'generate an entity trace list for each test unit'); running the program executable with a test case from the identified set of test cases (col. 7, lines 30-33 'for each of the N test units') and writing the

information about the test case and the coverage points that are executed into an output file (col. 7, lines 40-44 'generates a function trace list'), until all the test cases have been run (col. 7, line 32 'for each of the N test units'); and processing the information contained in the output file into code coverage data and populating the code coverage database with said code coverage data (col. 9, lines 32-35 'the function trace lists ... are then used to generate an entity trace list').

Regarding Claim 13: The rejection of claim 8 is incorporated; further, Chen discloses modifying the computer program to produce a modified version of the computer program source code (col. 10. line 50-53 'after modifications have been made'); identifying a plurality of new, modified, and deleted code coverage tasks (col. 10, lines 63-66 'entity difference list') in said modified version of the computer program source code; generating a persistent unique name (col. 9, lines 1-3 'all entities have the attributes ... kind, ... name' and col. 11, lines 20-21 'two entities match if they have the same name and entity kind') for each of the new and modified code coverage tasks of said plurality of new, modified and deleted code coverage tasks; inserting coverage points (col. 7, lines 7-9 'adding instrumentation') into the modified version of the computer program source code for each of the new and modified code coverage tasks to produce an instrumented modified version of the computer program source code; compiling and linking the instrumented modified version of the computer program source code (col. 7, lines 9-11 'compiled by a C compiler') into a modified program executable, identifying a new set of test cases (col. 11, lines 66-67 'the entity difference list is used ... to determine which tests units ... need to be re-run') from a plurality of

test cases to be run for the code coverage data collection purposes on the new and modified code coverage tasks; altering the code coverage database to accommodate new, modified and deleted code coverage tasks (col. 12, lines 41-47 'new entity trace lists must be generated for each test unit') and the new set of test cases, and clearing any code coverage data for the modified code coverage tasks (col. 12, lines 41-43 'new entity traces list must be generated') from said code coverage database; running the modified program executable with a test case from the identified new set of test cases (col. 11, lines 66-67 're-run') and collecting code coverage data for the new and modified code coverage tasks (col. 7, lines 40-44 'generates a function trace list'), until all the test cases have been run (col. 7, line 32 'for each of the N test units'); and updating the code coverage database with the collected code coverage data (col. 9, lines 32-35 'the function trace lists ... are then used to generate') for the new and modified code coverage tasks; whereby the previously collected code coverage data for the non-affected code coverage tasks is preserved (col. 12, liens 41-47 'new entity trace lists must be generated ... covered by each of the selected test units') from a previous version of the computer program to the modified version of said computer program eliminating the need for running the entire test bucket (col. 11, lines 66-67 'which test units ... need to be re-run').

Regarding Claim 14: The rejection of claim 13 is incorporated; further Chen discloses changing the version indicator (col. 8, lines 59-63 'checksum is used ... to determine whether an entity has been changed' and col. 11, lines 26-27 'the checksum ... is retrieved from the second C program database'). While not explicitly stated, the

checksum does identify the version of the entity in that it distinguishes between two different versions of said entity.

Regarding Claim 15: Chen discloses an article of manufacture comprising a program storage device (col. 6, lines 50-52 'the external storage device) readable by a computer and tangibly embodying one or more programs of instructions (col. 6, lines 50-52 'the external storage device ... may be used for the storage of ... computer program code') executable by the computer to perform method steps for collecting persistent code coverage data for a computer program (col. 1, lines 11-14 'selective regression'), the computer program comprising program source code statements (col. 5, lines 33-52), the method comprising the steps of: identifying the computer program for which the persistent code coverage data should be collected (col. 2, lines 47-50 'a software system'); dividing the program source code statements of said computer program into a plurality of code coverage tasks (col. 2 lines 47-50 'partitioned into basic code entities'), generating a persistent unique name for each of the code coverage tasks (col. 9, lines 1-3 'all entities have the attributes ... kind, ... name' and col. 11, lines 20-21 'two entities match if they have the same name and entity kind') of said plurality of code coverage tasks; inserting coverage points into the computer program source code for each of the code coverage tasks to produce an instrumented program (col. 7, lines 7-9 'adding instrumentation'), compiling and linking the instrumented program into a program executable (col. 7, lines 9-11 'compiled by a C compiler'), identifying a set of test cases from a plurality of test cases to be run for the code coverage data collection purposes (col. 11, lines 66-67 'determine which test units ... need to be re-run'); creating a code

coverage database using the code coverage tasks and the identified set of test cases (col. 9, lines 32-35 'generate an entity trace list for each test unit'); running the program executable with a test case from the identified set of test cases (col. 7, lines 30-33 'for each of the N test units') and writing the information about the test case and the coverage points that are executed into an output file (col. 7, lines 40-44 'generates a function trace list'), until all the test cases have been run (col. 7, line 32 'for each of the N test units'); and processing the information contained in the output file into code coverage data and populating the code coverage database with said code coverage data (col. 9, lines 32-35 'the function trace lists ... are then used to generate an entity trace list').

Regarding Claim 20: The rejection of claim 15 is incorporated; further, Chen discloses modifying the computer program to produce a modified version of the computer program source code (col. 10. line 50-53 'after modifications have been made'); identifying a plurality of new, modified, and deleted code coverage tasks (col. 10, lines 63-66 'entity difference list') in said modified version of the computer program source code; generating a persistent unique name (col. 9, lines 1-3 'all entities have the attributes ... kind, ... name' and col. 11, lines 20-21 'two entities match if they have the same name and entity kind') for each of the new and modified code coverage tasks of said plurality of new, modified and deleted code coverage tasks; inserting coverage points (col. 7, lines 7-9 'adding instrumentation') into the modified version of the computer program source code for each of the new and modified code coverage tasks to produce an instrumented modified version of the computer program source code;

compiling and linking the instrumented modified version of the computer program source code (col. 7, lines 9-11 'compiled by a C compiler') into a modified program executable, identifying a new set of test cases (col. 11, lines 66-67 'the entity difference list is used ... to determine which tests units ... need to be re-run') from a plurality of test cases to be run for the code coverage data collection purposes on the new and modified code coverage tasks; altering the code coverage database to accommodate new, modified and deleted code coverage tasks (col. 12, lines 41-47 'new entity trace lists must be generated for each test unit') and the new set of test cases, and clearing any code coverage data for the modified code coverage tasks (col. 12, lines 41-43 'new entity traces list must be generated') from said code coverage database; running the modified program executable with a test case from the identified new set of test cases (col. 11, lines 66-67 're-run') and collecting code coverage data for the new and modified code coverage tasks (col. 7, lines 40-44 'generates a function trace list'), until all the test cases have been run (col. 7, line 32 'for each of the N test units'); and updating the code coverage database with the collected code coverage data (col. 9, lines 32-35 'the function trace lists ... are then used to generate') for the new and modified code coverage tasks; whereby the previously collected code coverage data for the non-affected code coverage tasks is preserved (col. 12, liens 41-47 'new entity trace lists must be generated ... covered by each of the selected test units') from a previous version of the computer program to the modified version of said computer program eliminating the need for running the entire test bucket (col. 11, lines 66-67 'which test units ... need to be re-run').

Regarding Claim 21: The rejection of claim 20 is incorporated; further Chen discloses changing the version indicator (col. 8, lines 59-63 'checksum is used ... to determine whether an entity has been changed' and col. 11, lines 26-27 'the checksum ... is retrieved from the second C program database'). While not explicitly stated, the checksum does identify the version of the entity in that it distinguishes between two different versions of said entity.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2-3, 9-10, 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,573,387 to Chen et al. (Chen) in view of 'Managing data through naming standards' by Winder, Software, IEEE, Volume: 7, Issue: 4, July 1990 (Winder).

Regarding Claims 2, 9, and 16: The rejections of claim 1, 8 and 15 are incorporated respectively; further Chen does not disclose using naming conventions. But does disclose attributes of each entity provide a unique identifier for said entity (col. 11, lines 20-21 'two entities match if they have the same name and entity kind.').

Winder teaches using a naming convention (pg. 85, col. 1, par. 3 'A naming standard fights ... ambiguity') in an analogous art for the purpose of managing data and eliminating ambiguity (pg. 85, col. 1, par. 4 'eliminating the ambiguity').

It would have been obvious to a person of ordinary skill in the art at the time of the invention to include a naming convention as taught by Winder in the naming of coverage tasks ('entities') as disclosed in Chen.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide names for entities that would have been indicative of their position and use in the code (Winder pg. 84, col. 3, par. 1-2 'determines your ability to access the information')

Regarding Claim 3, 10 and 17: the rejection of claims 2, 9 and 16 is incorporated; further, Chen does not disclose the naming convention comprising a module name, a version and a unique task identifier But does disclose maintaining similar attributes (i.e. col. 9, lines 1-3 'kind, file, name and checksum') where checksum is used to determine a function version (col. 8, lines 59-62 'determine whether an entity has been changed')

Winder does not teach the naming convention comprising a module name, a version and a unique task identifier either. But instead teaches the use of a three part naming convention (pg. 85, col. 2, par. 1 'these data-element names are called primary, class, and modifier').

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use Winder's three part naming convention (pg. 85, col. 2, par. 1) populated with the data gathered in Chen col. (col. 9, lines 1-3) to label the entities disclosed in

Chen (col. 8, lines 1-4) thereby creating a unique naming convention comprising a computer program module name (col. 8, lines 44-45 'file'), a version indicator (col. 8, lines 51-52 'checksum'), and a unique code coverage task identifier (col. 8, lines 46-47 'name').

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide names for entities that would have been indicative of their position and use in the code (Winder pg. 84, col. 3, par. 1-2 'determines your ability to access the information')

Claims 4, 11, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,573,387 to Chen et al. (Chen) in view of USPN 5,778,169 to Reinhardt (Reinhardt).

Regarding Claims 4, 11, and 18: The rejections of claims 1, 8, and 15 are incorporated, respectively; further, Chen does not disclose that the code coverage database comprises a table, the table comprising a row for each test case in said identified set of test cases and a column for each code coverage task of said plurality of code coverage tasks, said column comprising an indicator at each row indicating coverage status for said code coverage task. But does foresee the need to allow a user to determine which test units would need to be re-run if a hypothetical change were made to the software system (col. 12, lines 55-58).

Reinhardt teaches the code coverage database comprises a table (col. 6, lines 16-18 'test coverage matrix'), the table comprising a row for each test case (col. 6, lines 24-25

'names of the tests') in said identified set of test cases and a column for each code coverage task (col. 6, lines 25-26 'coverage point names') of said plurality of code coverage tasks, said column comprising an indicator at each row indicating coverage status for said code coverage task (col. 6, lines 26-27 'the relationship between the tests and coverage points'), in an analogous art for the purpose of providing programmers with knowledge of which coverage points are executed by which tests (col. 6, lines 34-35 'view the test coverage matrix')

It would have been obvious to a person of ordinary skill in the art at the time of the invention to use the matrix taught by Reinhardt in the regression test system of Chen to display the program's code coverage data to a programmer (Chen col. 12, lines 55-58). The modification would have been obvious because one of ordinary skill in the art would have been motivated to allow programmers to easily identify regression tests that test possible source code changes (Reinhardt, col. 2, lines 62-63).

Claims 5, 12 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPN 5,573,387 to Chen et al. (Chen).

Regarding Claims 5, 12, and 19: The rejections of claims 1, 8, and 15 are incorporated respectively; further, Chen does not disclose that the computer program comprises program source code statements written in a hardware description language. But does teach that his invention may be 'applied to the selective regression testing of software systems written in other languages' (col. 9, lines 22-24).

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement selective regression testing, as detailed by Chen, for a hardware description language.

The modification would have been obvious because one of ordinary skill in the art would have been motivated to provide a system to regression test software written in languages other than C (col. 9, lines 22-24).

Conclusion

1. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Mitchell whose telephone number is (571) 272-3728. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571) 272-3719. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Jason Mitchell
6/1/05

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